AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently Amended) A ~~dielectric layer~~barrier structure, comprising:

a densified amorphous dielectric layer deposited on a substrate by pulsed-DC, substrate biased physical vapor deposition,

a soft-metal at the interface between the densified amorphous dielectric layer and the substrate, wherein the strain between the densified amorphous dielectric layer and the substrate is reduced by the soft-metal, and

wherein the densified amorphous dielectric layer is a barrier layer.

2. (Cancel).

3. (Currently amended) The ~~layer~~structure of claim 1, wherein the barrier layer is also an optical layer.

4. (Currently amended) The ~~layer~~structure of claim ~~3~~1, wherein the barrier layer includes a TiO_2 layer.

5. (Currently amended) The ~~layer~~structure of claim ~~3~~1, wherein the barrier layer includes an Alumina/Silica layer.

6. (Withdrawn) The ~~layer~~structure of claim 3, further including a soft-metal breath treatment.

7. (Withdrawn) The ~~layer~~structure of claim 6, wherein the soft-metal breath treatment is an indium-tin vapor treatment.

8. (Withdrawn) The ~~layer~~structure of claim 1, wherein the barrier layer is also an electrical layer.

9. (Withdrawn) The ~~layer~~structure of claim 8, wherein the barrier layer includes a capacitive layer.

10. (Withdrawn) The ~~layer~~structure of claim 9, wherein the capacitive layer is a TiO_2 layer.

11. (Withdrawn) The ~~layer~~structure of claim 9, wherein the capacitive layer is an Alumina/silica layer.

12. (Withdrawn) The ~~layer~~structure of claim 8, wherein the barrier layer includes a resistive layer.

13. (Withdrawn) The ~~layer~~structure of claim 12, wherein the resistive layer is indium-tin metal or oxide.

14. (Withdrawn) The ~~layer~~structure of claim 8, further including a soft-metal breath treatment.

15. (Withdrawn) The ~~layer~~structure of claim 14, wherein the soft-metal breath treatment is an indium-tin vapor treatment.

16. (Withdrawn) The ~~layer~~structure of claim 1, wherein the barrier layer includes a tribological layer.

17. (Withdrawn) The ~~layer~~structure of claim 16, wherein the tribological layer is a TiO_2 layer.

18. (Withdrawn) The ~~layer~~structure of claim 16, wherein the tribological layer is Alumina/silica.

19. (Withdrawn) The ~~layer~~structure of claim 16, further including a soft-metal breath treatment.

20. (Withdrawn) The ~~layer~~structure of claim 19, wherein the soft-metal breath treatment is an indium-tin vapor treatment.

21. (Withdrawn) The ~~layer~~structure of claim 1, wherein the barrier layer is a biologically immune compatible layer.

22. (Withdrawn) The ~~layer~~structure of claim 1, wherein the biologically immune compatible layer is TiO_2.

23. (Withdrawn) The ~~layer~~structure of claim 21, further including a soft-metal breath treatment.

24. (Withdrawn) The ~~layer~~structure of claim 23 wherein the soft-metal breath treatment is an indium-tin vapor treatment.

25. (Currently amended) The ~~layer~~structure of claim 1, wherein the dielectric film is TiO_2.

26. (Currently amended) The ~~layer~~structure of claim 1, wherein a target utilized to form the dielectric film has a concentration of 92% Al and 8% Si.

27. (Currently amended) The ~~layer~~structure of claim 1, wherein ~~the~~a target utilized to form the dielectric film is formed from metallic magnesium.

28. (Currently amended) The ~~layer~~structure of claim 1, wherein ~~the~~ a target material utilized to form the dielectric film comprises materials chosen from a group consisting of Mg, Ta, Ti, Al, Y, Zr, Si, Hf, Ba, Sr, Nb, and combinations thereof.

29. (Currently amended) The ~~layer~~structure of claim 28, wherein the target material includes a concentration of rare earth metal.

30. (Currently amended) The ~~layer~~structure of claim 1, wherein ~~the~~a target material utilized to form the dielectric film comprises a sub-oxide of a group consisting of Mg, Ta, Ti, Al, Y, Zr, Si, Hf, Ba, Sr, Nb, and combinations thereof.

31. (Withdrawn) The ~~layer~~structure of claim 1, further including a soft-metal breath treatment.

32. (Withdrawn) The ~~layer~~structure of claim 31, wherein the soft-metal breath treatment is an indium-tin vapor treatment.

33. (Withdrawn) The ~~layer~~structure of claim 1, wherein the dielectric film has a permeable defect concentration of less than about 1 per square centimeter.

34. (Currently amended) The ~~layer~~structure of claim 1, wherein ~~the~~a water vapor transmission rate through the barrier layer is less than about 1 X 10^{-2} gm/m^2/day.

35. (Currently amended) The ~~layer~~structure of claim 1, wherein ~~the~~an optical attenuation through the barrier layer is less than about 0.1 dB/cm in a continuous film.

36. (Currently amended) The ~~layer~~structure of claim 1, wherein the barrier layer has a thickness less than about 500 nm.

37. (Currently amended) The ~~layer~~structure of claim 36, wherein the water vapor transmission rate is less than about 1 X 10^{-2} gm/m^2/day.

38. (Currently amended) The ~~layer~~structure of claim 1, wherein a thickness of the barrier layer ~~thickness~~ is less than about 1 micron and ~~the a~~ water vapor transmission rate through the barrier layer is less than about 1 X 10^{-2} gm/m^2/day.

39. (Withdrawn) The ~~layer~~structure of claim 1, wherein the barrier layer operates as a gate oxide for a thin film transistor.

40. (Withdrawn) A method of forming a barrier layer, comprising:

providing a substrate;

depositing a highly densified, amorphous, dielectric material over the substrate in a pulsed-DC, biased, wide target physical vapor deposition process.

41. (Withdrawn) The method of claim 40, further including

performing a soft-metal breath treatment on the substrate.

42. (Withdrawn) The method of claim 40, wherein the dielectric material is formed from a target comprising 92% Al and 8% Si.

43. (Withdrawn) The method of claim 40, wherein the dielectric material is formed from a target comprising of Titanium.

44. (Withdrawn) The method of claim 40, wherein the dielectric material is formed from a target material comprising materials chosen from a group consisting of Mg, Ta, Ti, Al, Y, Zr, Si, Hf, Ba, Sr, Nb, and combinations thereof.

45. (Withdrawn) The method of claim 41, wherein the soft-metal breath treatment is an indium/tin breath treatment.

46. (New) The dielectric layer of claim 1, wherein the soft-metal is indium-tin.

47. (New) The dielectric layer of claim 1, wherein the barrier layer is an electrical layer.

48. (New) A barrier structure, comprising:

a densified amorphous dielectric layer deposited on a substrate by pulsed-DC, substrate biased physical vapor deposition,

wherein the densified amorphous dielectric layer is a barrier layer, and

wherein a water vapor transmission rate through the barrier layer is less than about 1×10^{-2} gm/m^2/day.

49. (New) The structure of claim 48, wherein the barrier layer is also an optical layer.

50. (New) The structure of claim 48, wherein the barrier layer includes a TiO_2 layer.

51. (New) The structure of claim 48, wherein the barrier layer includes an Alumina/Silica layer.

52. (New) The structure of claim 48, wherein an optical attenuation through the barrier layer is less than about 0.1 dB/cm in a continuous film.

53. (New) The structure of claim 48, wherein the barrier layer has a thickness less than about 500 nm.

54. (New) The structure of claim 48, further including a soft-metal at the interface between the barrier layer and the substrate.